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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,827	09/25/2001	Enrique Musoll	P3842	3478

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EXAMINER

SHIN, KYUNG H

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/964,827

Applicant(s)

MUSOLL, ENRIQUE

Examiner

Kyung H Shin

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-- The MAILING DATE of this communicati n appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/13/04, 4/7/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is responding to application papers filed 9/25/2001
2. Claims 1 - 28 are pending. Independent claims are 1, 8, 13, 19.

Claim Rejection - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1 - 3, 6 - 10, 13, 14, 23 - 28 are rejected under 35 U.S.C. 102(e) as being unpatentable over Kalkunte et al. (US Patent No. 6,813,268).**

Regarding Claim 1, Kalkunte discloses a system for managing packets incoming to a data router comprising:

- a) a local packet memory (LPM) mapped into preconfigured memory units, to store packets for processing; (see Kalkunte col. 6, lines 26-30; col. 6, lines 32-34: CBP (Common Buffer Pool) network switch local packet memory utilizing buffers (pre-configured memory units))

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- b) an external packet memory (EPM); (see Kalkunte col. 6, lines 43-50: GBP (Global memory Buffer Pool) utilizing external memory)
- c) a first storage system to store packets in the LPM; (see Kalkunte col. 6, lines 26-30; col. 6, lines 50-52: CBP, a first storage system) and
- d) a second storage system to store packets in the EPM; (col. 6, lines 43-50: GBP, a second storage system)
- e) characterized in that the first storage system attempts to store all incoming packets in the LPM, and for those packets that are not compatible with the LPM, relinquishes control to the second system, which stores the LPM incompatible packets in the EPM. (see Kalkunte col. 15, lines 12-58; col. 34, lines 18-29: criteria for packet storage in Common Buffer Pool (Local Packet Memory) or Global Buffer Pool (External Packet Memory))

Regarding Claims 2, 9, Kalkunte discloses the system of claim 1 wherein the first storage system is hardware controlled and the second storage system is softwarecontrolled. (see Kalkunte col. 6, lines 26-27: first storage system on-chip data memory (hardware controlled) col. 6, lines 54-56: second storage system is controlled by PMMU programmed unit (software controlled))

Regarding Claims 3, 10, 16, Kalkunte discloses the system of claim 1 wherein the preconfigured memory units comprise memory blocks of preprogrammed size available for consecutive packet storage within the memory. (see Kalkunte col. 7, lines 23-26: packets are stored as cells, cell is fixed size blocks)

Regarding Claims 6, 17, Kalkunte discloses the system of claim 2 wherein the first storage system is implemented as an integrated circuit (IC) or IC chip set. (see Kalkunte col. 6, lines 26-30: first storage system, CBP, is on-chip data memory)

Regarding Claim 7, Kalkunte discloses the system of claim 1 wherein the first storage system provides a memory address to the second storage system in the event of upload of a packet into the second memory. (see Kalkunte col. 33, lines 26-37; col. 6, lines 50-52: Direct Memory Address (DMA) provides direct addresses for memory access, PMMU interfaces second storage system)

Regarding Claim 8, Kalkunte discloses a data packet router comprising:

- a) external ports to receive and send data packets from and to neighboring connected routers; (see Kalkunte col. 4, lines 12-16; col. 10, line 66 - col. 11, line 2: ingress (input) and egress (output) ports provided for network switch) and
- b) a system for managing packets incoming to a data router, the system having a local packet memory (LPM) mapped into preconfigured memory units (see Kalkunte col. 6, lines 26-30; col. 6, lines 32-34: Common Buffer Pool within network switch utilizing local packet memory comprised of buffers (pre-configured memory units)), to store packets for processing, an external packet memory (EPM) (see Kalkunte col. 6, lines 43-50: Global memory Buffer Pool utilizing external memory), a first storage system to store packets in the LPM;

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(see Kalkunte col. 6, lines 26-30; col. 6, lines 50-52: CBP, a first storage system)

and

c) a second storage system to store packets in the EPM; characterized in that the first storage system attempts to store all incoming packets in the LPM, and for those packets that are not compatible with the LPM, relinquishes control to the second system, which stores the LPM incompatible packets in the EPM. (see Kalkunte col. 15, lines 12-58; col. 34, lines 18-29: criteria for data packet storage in CBP (LPM) or GBP (EPM))

Regarding Claim 13, Kalkunte discloses a method for managing packets incoming to a data router, comprising the steps of:

- a) attempting to store all incoming packets, by a first storage system, into a local packet memory (LPM) that is mapped into preconfigured memory units; (see Kalkunte col. 6, lines 26-30; col., 6, lines 32-34: Common Buffer Pool within network switch utilizing local packet memory comprised of buffers (pre-configured memory units))
- b) relinquishing packets incompatible with the LPM to a second storage system; and storing the LPM incompatible packets in an external packet memory by a second storage system. (see Kalkunte col. 15, lines 12-58; col. 34, lines 18-29: criteria for packet storage in CBP (LPM) or GBP (EPM))

Regarding Claim 18, Kalkunte discloses the method of claim 17 wherein in step (c) the second storage system is softwarecontrolled. (see Kalkunte col. 6, lines 43-52: GBP, second storage system - PMMU (programmed) interface for controlling external

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memory)

Regarding Claim 19, Kalkunte discloses a method for retrieving a data packet stored in an external packet memory (EPM) in a data router , comprising the steps of:

- a) receiving a notification that packet processing is complete for a particular packet; (see Kalkunte col. 14, line 61 - col. 15, line 4: monitor packet processing)
- b) determining that the particular packet does not reside in a first memory; (see Kalkunte col. 34, lines 38-41: criteria for packet placement between CBP (first storage system) and GBP (second storage system))
- c) requesting software to download the packet from the external packet memory, the download to begin at a prespecified memory address provided with the request; downloading the data packet from the overflow memory via software; (see Kalkunte col. 11, lines 21-27; col. 34, lines 38-41: packets transferred from second storage system for output) and
- e) performing routine packet accounting via hardware after the download is complete. (see Kalkunte col. 14, line 61 - col. 15, line 4: monitor packet processing and update accounting parameters (cell count))

Regarding Claim 23, Kalkunte discloses the system of claim 1 wherein storage of packets in the EPM is enabled by a usercontrolled mechanism, and if not enabled, packets found to be not compatible with the LPM are simply dropped. (see Kalkunte col. 21, lines 16-18; col. 21, lines 55-57: programmed exclusive filtering mechanism results

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in dropped packets when no match is found)

Regarding Claim 24, Kalkunte discloses the system of claim 1 wherein, if a first packet is dropped, a lock is asserted to prevent any other packet being dropped until the system has finished all processing associated with the first packet dropped. (see Kalkunte col. 21, lines 18-20: tag value = lock; packet Quality of Service (QoS) filtering to eliminate retransmissions (no dropped packets: TCP/IP guarantees packet delivery))

Regarding Claim 25, Kalkunte discloses the system of claim 24 further comprising a mechanism for determining packet source, wherein lock is asserted only for packets having the same source as a packet dropped. (see Kalkunte col. 19, line 66 - col. 20, line 3: Quality of Service (Qos) filtering mechanism based on source address)

Regarding Claim 26, Kalkunte discloses the system of claim 24 wherein the mechanism for asserting a lock involves a lock bit managed by software. (see Kalkunte col. 21, lines 55-57: filtering is a programmed function)

Regarding Claim 27, Kalkunte discloses the system of claim 25 wherein lock bits are provided for each packet source, enabling lock to be devicedependent. (see Kalkunte col. 2, lines 53-58: tag provided for each packet on ingress (input) and removed on egress (output))

Regarding Claim 28, Kalkunte discloses the system of claim 27 wherein the lock bits are bits of a common configuration register. (see Kalkunte col. 6, lines 17-23: configuration registers are used for network switch packet filtering processing parameters)

5. Claims 4, 5, 11, 12, 15, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalkunte in view of Tarditi (US Patent No. 6,625,808).

Regarding Claims 4, 11, 20, 21 Kalkunte does not disclose the data router operational over the Internet. However, Tarditi discloses the system of claims 1, 8, 19 wherein the data router is connected to and operates on the Internet. (see Tarditi col. 7, lines 43-57: data packet router operational over Internet networks)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kalkunte to operate over multiple types of networks such as the Internet as taught by Tarditi. One of ordinary skill in the art would be motivated to employ Tarditi in order to expand communications between network devices including routers over commonplace networking environments. (see Tarditi col. 7, lines 35-47: “*... a router or other network device ... a local area network (LAN) 180 and a wide area network (WAN) 182 ... commonplace in offices, enterprise-wide computer networks, Intranets, and the Internet ...*”)

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Regarding Claims 5, 12, 15, 22, Kalkunte does not disclose the data router operational over a corporate wide-area-network. However, Tarditi discloses the system of claims 1, 8, 13, 19 wherein the data router is connected to and operates on a corporate wideareanetwork (WAN). (see Tarditi col. 7, lines 43-57: data packet router operational over corporate wide area networks (enterprise-wide computer networks))

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kalkunte to operate over multiple types of networks such as the Internet as taught by Tarditi. One of ordinary skill in the art would be motivated to employ Tarditi in order to expand communications between network devices including routers over commonplace networking environments. (see Tarditi col. 7, lines 35-47)

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyung H Shin whose telephone number is (571) 272-3920. The examiner can normally be reached on 9 am - 7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KHS

Kyung H Shin
Patent Examiner
Art Unit 2143

KHS

Dec. 26, 2004


ZARNI MAUNG
SUPERVISORY PATENT EXAMINER